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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/217,401	12/21/1998	KENZO ISHIDA	S84.088US1	8371

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EXAMINER

TRAN, THANH Y

ART UNIT	PAPER NUMBER
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2841

DATE MAILED: 06/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/217,401

Applicant(s)

ISHIDA ET AL.

Examiner

Thanh Y. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-7,9-14 and 17-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-7,9-14 and 17-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Applicant's arguments with respect to claims 1, 4-7, 9-14, 17-24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4-5, 7, 18-19 and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US 4,620,761) in view of Daglow et al. (U.S. 4,898,173).

As to claims 1 and 4, Smith et al. disclose a mounting socket (see Fig. 9) comprising: a socket body (70) having a first side and a second opposite side, the body (70) having a plurality of vias extending therethrough (72 and 74); and a plurality of conductive terminals (80) within the vias (72 and 74), wherein the terminals (80) are adapted to be elastically compressible and exert a return force when compressed (see Fig. 9, element 80; column 6, lines 23-35), the terminals comprising a coil (see Fig. 9, column 5, line 53).

Smith et al. does not disclose the terminals comprising a conductive polymer injected within the vias. Daglow et al. discloses a connector assembly (see Fig. 2) wherein the terminal comprising a conductive polymer injected within the vias (see Fig. 2, elements 106, 108; col. 4, lines 9-13). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to implement the terminals as shown in figure 9 of Smith et al.

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by adding a conductive polymer material therein as taught by Daglow et al. for the purpose of providing a flexible and easy manufacture for a connector assembly (see col. 1, line 60 - col. 2, line 19).

Moreover, it has been held to be within the general skill of a worker in the art to select a known material, such as a conductive polymer, on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

As to claims 5 and 7, Smith et al. discloses the instant claimed invention except for: a first and second adhesive layer affixed to the first and second sides of the body. The Examiner takes an official notice that it is known to provide a first and second adhesive layers affixed to the first and second sides of the body of an assembly. The limitations of a first adhesive layer and a second adhesive layer used for attaching the conductive terminals between the circuit board and package would have been obvious to one of ordinary skill in the art at the time the invention was made because the skilled artisan would use the adhesive material such as adhesive layer for the purpose of securing the terminals in order to locate within the right position, and also attaching between the two elements (circuit board and package) securely.

As to claims 18-19, Smith et al. disclose a substrate (70) having a plurality of conductive terminals (80), therethrough, the terminals (80) are adapted to be elastically compressible and exert a return force when compressed (see column 7, lines 23-30), the terminals comprising a coil (see Fig. 9, column 5, line 53).

Smith et al does not disclose the terminals comprising a conductive polymer; a first adhesive layer affixed to a first side of the substrate and a package affixed to the first adhesive layer, and a second adhesive layer affixed to a second side of the substrate, the second side opposite the first side.

The same reasoning applies to claims 18-19 regarding the limitation of the terminals comprising a conductive polymer as discussed above in claims 1 and 4. And the same reasoning applies to claims 18-19 regarding the limitation of “a first adhesive layer affixed to a first side of the substrate and a package affixed to the first adhesive layer, and a second adhesive layer affixed to a second side of the substrate, the second side opposite the first side” as discussed above in claims 5 and 7.

As to claim 20, Smith et al. disclose an integrated circuit interconnection (see Fig. 9) comprising: the substrate (70) having a plurality of vias (72 and 74); and a plurality of elastically compressible terminals, the terminals comprising a coil (see Fig. 9, column 5, line 53), and the terminals adapted to exert a return force when compressed, each terminal positioned in a via (see Fig. 9, element 80; column 6, lines 23-35).

Smith et al. does not disclose the terminals comprising a conductive polymer. The same reasoning applies to claim 20 regarding the limitation of the terminals comprising a conductive polymer as discussed above in claims 1 and 4.

As to claim 21, Smith et al. disclose a mounting socket (see Fig. 9) comprising: a socket body (70) having a first side and a second opposite side, the body (70) having a plurality of vias extending therethrough (72 and 74); and a plurality of conductive terminals (80) within the vias (72 and 74), wherein the terminals (80) are adapted to be elastically compressible and exert a return force when compressed (see Fig. 9, element 80; column 6, lines 23-35), the terminals comprising a coil (see Fig. 9, column 5, line 53, and a circuit board having a plurality of mounting areas, the mounting areas disposed in a plurality of interconnected planes (88) which are substantially non-planar with each other and wherein each terminal is individually compressible to contact its respective mounting area at the plane of the mounting area (see Fig 9, element 88). Smith et al. does not disclose the terminals comprising a conductive polymer. The

same reasoning applies to claim 21 regarding the limitation of the terminals comprising a conductive polymer as discussed above in claims 1 and 4.

As to claim 22, Smith et al. disclose a circuit assembly, comprising: a microprocessor (see column 4, lines 5-13), a substrate having a built-in socket (70) having a plurality of vias (72 and 78) therein, and a plurality of conductive terminals (80), the terminals are adapted to exert a return force when compressed (see Fig. 9, element 80; column 6, lines 23-35), the terminals comprising a coil (see Fig. 9), at least a portion of each terminal disposed within a via; and a motherboard (14) having a plurality of mounting areas (88) thereon, wherein each terminal is compressed to contact a mounting area (see Fig. 9).

Smith et al. does not disclose the terminals comprising a conductive polymer. The same reasoning applies to claim 22 regarding to the limitation of the terminals comprising a conductive polymer as discussed above in claims 1 and 4.

As to claim 23, Smith et al. disclose the terminals (80) are adapted to accommodate for an uneven or warped substrate upon which the mounting socket is disposed (see Fig. 9).

As to claim 24, Smith et al. disclose the terminals (80) are solderless.

3. Claims 6 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (U.S. 4,620,761) and Daglow et al. (U.S. 4,898,173) as applied to claims 1, 4, and 5 above, and further in view of Stopperan (U.S. 5,719,749).

As to claim 6, Smith et al. discloses the instant claimed invention except for: a polymer tape applied to the first adhesive layer; a ground and power line circuit laid on the polymer tape; and a second adhesive layer applied on and protecting the ground and power line circuit.

Stopperan discloses the mounting assembly (see Figs. 2-3) having the first adhesive layer formed by polymer (see column 9, lines 17-19) and a ground (82) and power trace circuit (see column 1, lines 44-46) laid on the polymer tape and the second adhesive layer applied on and protecting the ground and power line circuit (see Figs. 2-3).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to implement the mounting device of Smith et al.'s by having ground and power traces laid on the polymer tape which is applied to the first adhesive layer as taught by Stopperan for the purpose of protecting the ground and power lines from being electronic shocks.

Claims 9-11 recite methods steps are inherently performed during the making of product claims 1 and 4-7.

4. Claims 12-14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al. (U.S. 4,705,205) in view of Daglow et al. (U.S. 4,898,173).

As to claim 12, Allen et al. disclose a circuit interconnect (Fig. 7), comprising: a circuit board carrier (32) having a plurality of through holes (39) formed therein; and a plurality of elastically compressible conductive terminals (see Fig. 13, element 62) with lands at each end (10, 12), each terminal disposed in one of the through holes (see Fig. 7, element 39), wherein the terminals are adapted to be elastically compressible and exert a return force when compressed, each terminal comprising a coil.

Allen et al. disclose the instant claimed invention except for: the terminals which comprise a conductive polymer. The same reasoning applies to claim 12 regarding to the

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limitation of the terminals comprising a conductive polymer as discussed above in claims 1 and 4.

As to claim 13, Allen et al. disclose a first adhesive layer (see Fig. 10, element 46) affixed to a first side of the circuit board carrier, the first layer having openings (42) to expose the lands.

As to claim 14, Allen et al. disclose a second adhesive layer (46) affixed to a second side of the circuit board carrier and the second layer (46) having openings (as shown in Fig. 10) to expose the lands (10, 12), the second side opposite the first side.

As to claim 17, Allen et al. disclose the instant claimed invention except for: the conductive terminals comprising a conductive polymer which is injected within the vias. Again, the same reasoning applies to claim 17 regarding to the limitation of the terminals comprising a conductive polymer as discussed above in claims 1 and 4.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Y. Tran whose telephone number is (703) 305-4757. The examiner can normally be reached on Monday through Thursday and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on (703) 308-3121. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3431.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



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